Appl. No. 10/814,374
Response Dated August 20, 2008
Reply to Office Action of June 11, 2008

Docket No.: 1020.P18414
Examiner: Insun Kang
TC/A.U. 2193

REMARKS

Claims 1-5 and 7-20 are pending in this application. Claims 1, 4, 11, 15, and 19 have been amended. Claim 6 was previously canceled. Support for the claim amendments can be found in the specification. No new matter has been added. Favorable reconsideration and allowance of the pending claims are respectfully requested.

Claim Rejections - 35 U.S.C. § 101

Claims 11-14 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicant respectfully traverses this rejection.

While Applicant disagrees with the § 101 rejection, independent claim 11 has been amended in order to advance prosecution on the merits. In particular, amended independent claim 11 recites "a memory to store a set of program instructions..." Applicant submits that amended independent claim 11 is clearly directed to statutory subject matter.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 101 rejection of claims 11-14.

Claim Rejections - 35 U.S.C. § 103(a)

Claims 1-5, 7, 8, 11, 13-15, and 17-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over "Efficient Path Profiling" by Ball et al. ("Ball") in view of United States Patent Number (USPN) 6,553,564 to Alexander, III et al. ("Alexander"). Applicant respectfully traverses this rejection.

To render a claim obvious under 35 U.S.C. § 103(a), there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the reference (or references when combined) must teach or suggest all the claim limitations. *See e.g.,* MPEP § 2143. Further, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the

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prior art and not based on applicant's disclosure. *In re Vaeck,* 947 F.2d 488, 20 USPQ2d
1438 (Fed. Cir. 1991).

Applicant respectfully submits that Ball and Alexander, whether taken alone or in
combination, fail to teach or suggest every element recited in amended independent claim
1. For example, amended independent claim 1 recites the following language, in relevant
part:

> assigning a partial path value to each partial path value
> field in a branch instruction for a set of program instructions;
> generating a trace for a subset of program instructions
> formed from a set of program instructions, with said trace
> comprising a path identifier value, start address, and end address,
> said path identifier value generated using at least one of said partial
> path value for said subset of program instructions;
> storing said trace in a trace buffer;

The Office Action relies on portions of Ball describing the instrumentation for a path
profiling algorithm to disclose the above language.

Ball at the given cite, in relevant part, states:

> Figure 2 illustrates the technique. Edge labeled by small
> squares contains instrumentation, which updates the state in
> register r. The loop contains six unique paths, and each
> one computes a different value for r, as shown in the table
> as shown in the table. At the end of the loop body (block
> F), register r holds the index to increment an array of
> counters.

Furthermore, Ball at page 6, left col., Section 3.4 "Instrumentation" describes
"initializing path register r [$r = 0$] in the *ENTRY* vertex; updating r in cord c [r += Inc(c)];
and incrementing a path's memory counter in the *EXIT* vertex [count[r]++]."

By way of contrast, the claimed subject matter recites "assigning a partial path
value to each partial path value field in a branch instruction; generating a trace for a
subset of program instructions formed from a set of program instructions, with said trace
comprising a path identifier value, start address, and end address, said path identifier
value generated using at least one of said partial path value for said subset of program
instructions." Applicant respectfully submits that updating the state in path register r is

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clearly different than "assigning a partial path value to each partial path value field in a branch instruction."

Further, Ball discloses an array of counters (count[]), indexed by path register r, wherein each counter to store a count value (count[r]++) of a single path taken through the routine. Applicant respectfully submits that storing a count value of a single path taken through the routine is clearly different from "said trace comprising a path identifier value, start address, and end address, said path identifier value generated using at least one of said partial path value for said subset of program instructions" and "storing said trace in trace buffer."

When addressing the admitted deficiencies of Ball, the Office Action relies on portions of Alexander. Applicant submits that Alexander also fails to teach or suggest the above recited claim language. For example, Alexander fails to teach or suggest "generating a trace for a subset of program instructions formed from a set of program instructions, with said trace comprising a path identifier value, start address, and end address, said path identifier value generated using at least one of said partial path value for said subset of program instructions."

In view of the above, even if Ball and Alexander could be combined, which Applicant does not admit, such combination would not teach or suggest all the features of amended independent claim 1. Further, Applicant submits that there is no teaching, suggestion or motivation to modify Ball and/or Alexander to include all the features of amended independent claim 1. Consequently, Ball and Alexander, whether taken alone or in combination, are insufficient to render amended independent claim 1 obvious under § 103(a).

For at least the above reasons, Applicant submits that amended independent claim 1 is allowable and that dependent claims 2-5, 7, and 8 are allowable by virtue of their dependency, as well as on their own merits.

Independent claims 11, 15, 19 have been amended to recite features similar to those recited in amended independent claim 1. Applicant respectfully submits that amended independent claims 11, 15, and 19 are allowable for reasons similar, but not identical, to those presented with respect to amended independent claim 1. Therefore, Applicant submits that amended independent claims 11, 15, and 19 are allowable and that

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dependent claims 13, 14, 17, 18, and 20 are allowable by virtue of their dependency, as well as on their own merits.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of claims 1-5, 7, 8, 11, 13-15, and 17-20.

Claims 9, 10, 12, and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ball, in view of Alexander, and further in view of USPN 6,094,729 to Mann ("Mann"). Applicant respectfully traverses this rejection.

Applicant respectfully submits that Ball, Alexander, and Mann, whether taken alone or in combination, fail to teach or suggest every element recited in amended independent claim 1. For example, none of the above references teaches or suggests "assigning a partial path value to each partial path value field in a branch instruction for a set of program instructions; generating a trace for a subset of program instructions formed from a set of program instructions, with said trace comprising a path identifier value, start address, and end address, said path identifier value generated using at least one of said partial path value for said subset of program instructions; storing said trace in a trace buffer."

In view of the above, even if Ball, Alexander, and Mann could be combined, which Applicant does not admit, such combination would not teach or suggest all the features of amended independent claim 1. Further, Applicant submits that there is no teaching, suggestion or motivation to modify Ball, Alexander, and/or Mann to include all the features of amended independent claim 1. Consequently, Ball, Alexander, and Mann, whether taken alone or in combination, are insufficient to render amended independent claim 1 obvious under § 103(a).

For at least the above reasons, Applicant submits that amended independent claim 1 is allowable and that dependent claims 9 and 10 are allowable by virtue of their dependency, as well as on their own merits.

As mentioned above, amended independent claims 11 and 15 recite features similar to those recited in amended independent claim 1. Therefore, Applicant respectfully submits that amended independent claims 11 and 15 are allowable for reasons similar, but not identical, to those presented with respect to amended independent

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claim 1 and that dependent claims 12 and 16 are allowable by virtue of their dependency, as well as on their own merits.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the § 103(a) rejection of claims 9, 10, 12, and 16.

Conclusion

It is believed that claims 1-5 and 7-20 are in allowable form. Accordingly, a timely Notice of Allowance to this effect is earnestly solicited.

Applicant does not otherwise concede, however, the correctness of the Office Action's rejection with respect to any of the features of the independent claims and dependent claims. Accordingly, Applicant hereby reserves the right to make additional arguments as may be necessary to further distinguish the claims from the cited references, taken alone or in combination, based on additional features contained in the independent claims and dependent claims that were not discussed above. A detailed discussion of these differences is believed to be unnecessary at this time in view of the basic differences in the independent claims pointed out above.

The Examiner is invited to contact the undersigned at 724-933-9344 to discuss any matter concerning this application.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 to deposit account 50-4238.

Respectfully submitted,

KACVINSKY LLC

/Robert V. Racunas/

Robert V. Racunas, Reg. No. 43,027
Under 37 CFR 1.34(a)

Dated: August 20, 2008
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